

U.S. Patent Application Serial No. 10/516,941

Amendment filed June 25, 2009

Reply to OA dated February 27, 2009

AMENDMENTS TO THE CLAIMS:

Please cancel claims 3-5 without prejudice or disclaimer, and amend claim 1, as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently amended): A canister for preventing fuel vaporization in which a latent-heat storage type adsorbent composition for canisters is placed in a canister case, the composition comprising an adsorbent and a heat-storage material;

the adsorbent being capable of adsorbing fuel vapor,

the heat-storage material comprising a microencapsulated phase-change material, the phase-change material absorbing or releasing latent heat in response to temperature change, wherein

the average particle diameter of the heat-storage material is about 1/1000 to about 1/10 of that of the adsorbent,

the average particle diameter of the adsorbent is about 1 µm to about 10 mm,

the average particle diameter of the heat-storage material is about 0.1 to about 500 µm,

the specific surface area of the adsorbent is about 500 to about 2500 m²/g,

the diameter of the micro pore is about 10 Å to about 50 Å, and

the content of the heat-storage material is about 10 to about 100 parts by weight based on 100 parts by weight of the adsorbent.

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Claim 2 (Previously presented): A canister for preventing fuel vaporization according to Claim 1, wherein the adsorbent is activated carbon, activated alumina or a mixture thereof.

Claims 3-5 (Canceled):

Claim 6 (Previously presented): A canister for preventing fuel vaporization according to Claim 1, wherein the heat-storage material is adhered to and/or deposited on the surface of the adsorbent.

Claim 7 (Previously presented): A canister for preventing fuel vaporization according to Claim 1, wherein the latent-heat storage type adsorbent composition is in a form of a molded article comprising the composition and a binder.

Claim 8 (Previously presented): A canister for preventing fuel vaporization according to Claim 7, wherein the molded article is in at least one shape selected from the group consisting of pellet, disc and block.

Claim 9 (Withdrawn): A method for producing a latent-heat storage type adsorbent composition for canisters according to Claim 1 wherein the heat-storage material is adhered to and/or deposited on the surface of the adsorbent.

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Claim 10 (Withdrawn): A method for producing a latent-heat storage type adsorbent composition for canisters according to Claim 1 wherein the heat-storage material is electrostatically adhered to and/or deposited on the surface of the adsorbent.

Claim 11 (Withdrawn): A method for producing a latent-heat storage type adsorbent composition for canisters according to Claim 1 wherein the heat-storage material and the adsorbent are uniformly mixed.

Claim 12 (Withdrawn): A method for producing a latent-heat storage type adsorbent composition for canisters according to Claim 1 wherein a slurry obtained by suspending the heat-storage material in a liquid medium is mixed with the adsorbent, and the mixture is then dried.

Claim 13 (Withdrawn): A method for producing a latent-heat storage type adsorbent composition for canisters comprising:

suspending a heat-storage material containing a microencapsulated phase-change material in a liquid medium to give a slurry, the phase-change material capable of absorbing or releasing latent heat in response to temperature change, and

spraying a liquid mixture containing the slurry and, if necessary, a binder, on the surface of the fuel vapor adsorbent.

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Claim 14 (Withdrawn): A method for producing a latent-heat storage type adsorbent composition for canisters comprising:

molding a heat-storage material containing a microencapsulated phase-change material capable of absorbing or releasing latent heat in response to temperature change to produce a molded article, and

uniformly mixing a fuel vapor adsorbent and the molded article.

Claim 15 (Withdrawn): A method for producing a latent-heat storage type adsorbent composition for canisters comprising:

uniformly mixing a fuel vapor adsorbent, a powdery heat storage material containing a microencapsulated phase-change material capable of absorbing or releasing latent heat in response to temperature change or a slurry suspending the powdery heat storage material in the liquid medium, a binder and water, and

molding the resultant mixture to form a desired shape.

Claim 16 (Previously presented): A canister for preventing fuel vaporization according to Claim 1, wherein the latent-heat storage type adsorbent composition for canisters is obtained by a method comprising:

suspending the heat-storage material in a liquid medium to give a slurry, and

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spraying a liquid mixture containing the slurry and, if necessary, a binder, on the surface of the fuel vapor adsorbent.

Claim 17 (Canceled).

Claim 18 (Previously presented): A canister for preventing fuel vaporization according to Claim 1, wherein the latent-heat storage type adsorbent composition for canisters is obtained by a method comprising:

molding a heat-storage material to produce a molded article, and
uniformly mixing the adsorbent and the molded article.

Claim 19 (Previously presented): A canister for preventing fuel vaporization according to claim 1, wherein the latent-heat storage type adsorbent composition for canisters is obtained by a method comprising:

uniformly mixing a fuel vapor adsorbent, the heat storage material, the heat storage material being a powder or a slurry suspending the powdery heat storage material in the liquid medium, a binder and water, and
molding the resultant mixture to form a desired shape.